

Dr. Ward eviscerates. In truth, mechanism inverted is spiritualistic monism. The naturalism not yet fully formulated, which has allied itself provisionally and in no way illegitimately with neutral agnosticism, is happily neither materialism nor idealism. H. W. B.

THE EVOLUTION OF EUROPEAN PEOPLES.

The Races of Europe: a Sociological Study. By William Z. Ripley, Ph.D. Pp. 624; and bibliography, pp. 160. 222 portrait types; 86 maps and diagrams, and other illustrations. (London: Kegan Paul, Trench, Trübner and Co., Ltd., 1900.)

IT has been reserved for an American anthropologist to give us the first comprehensive work on the races of Europe, a subject which is as fascinating as it is important.

The first two chapters of this comprehensive work deal with general questions, among others the problem of environment *versus* race in determining ethnic characters is touched upon, and the error of confusing community of language with identity of race is pointed out; nationality may often follow linguistic boundaries, but race bears no necessary relation to them.

As the main arguments in the book are derived from a consideration of three main sets of comparative data—the head-form, hair- and eye-colour, and stature—it was necessary to discuss their value, and in doing so the author has passed in brief review various races of man in all parts of the world. As the shape of the head, that is the length-breadth, or cephalic index, is not liable to be affected by environment as pigmentation appears to be, and stature certainly is, it takes the first rank as a criterion of race, the colour of the hair and eyes comes second, while stature is relegated to the third rank.

Dr. Ripley states as a proposition that is “fairly susceptible of proof”:

“The European races, as a whole, show signs of a secondary or derived origin; certain characteristics, especially the texture of the hair, lead us to class them as intermediate between the extreme primary types of the Asiatic and the negro races respectively.”

Surely the wavy-haired group of mankind has as much a claim to be considered primitive as are the frizzly- or the straight-haired groups. That certain characters are intermediate does not imply that a mixture has taken place. In some respects each of these three main groups of mankind is nearer to, and in others further from, the higher apes than the other two groups; the wavy character of the hair of the Europeans, for example, is probably an ancestral feature that has been retained by them and the other Cymotrichi.

The earliest and lowest strata of population in Europe were extremely long-headed, and the author regards the living Mediterranean race as most nearly representative of them. He considers it highly probable that the Teutonic race of Northern Europe is merely a variety of the primitive long-headed type of the Stone Age; both its distinctive blondness and its remarkable stature having been acquired in the relative isolation of Scandinavia, through the modifying influence of environment and artificial selection. It is certain that, after the partial occupation of Western Europe by a dolichocephalic type in

the Stone Age, an invasion by a broad-headed race of decidedly Asiatic affinities took place. This intrusive element is represented to-day by the Alpine type of Central Europe.

It is the play of these three groups, Teutonic or Nordic, Alpine and Mediterranean, upon one another, together with the effect of environment, the potency of which varies locally, occasional isolation and sexual selection, which has resulted in the complexity of the ethnology of modern Europe.

Dr. Ripley deals with the various countries of Europe, and endeavours to unravel the anthropological history of each. It is a humiliating fact how often political or religious bias has crept into ethnological arguments; but our author approaches the subject with an unprejudiced mind, and looks at the problem from a broad point of view.

The most remarkable trait of the population of the British Isles is the uniformity of its head-form; the prevailing type is that of the long and narrow cranium, accompanied by an oval rather than broad or round face. The length-breadth indices all lie between 77 and 79, with the possible exception of the middle and western parts of Scotland, where they fall to 76. This index alone proves little in the present instance, and recourse must be made to other characters, such as hair-colour and stature.

These distinctly prove a dual element in the population, one of which is the persistent Neolithic stock, a branch of the Mediterranean race; the other is the northern race, composed of Saxon, Danish and Norwegian elements. Immigrants belonging to the Alpine race, not pure, but as a mixed people, overran all England and part of Scotland, bringing with them bronze implements, the art of pottery-making, and other cultural advantages; but their physical influence was transitory, for at the opening of the historic period the earlier types had considerably absorbed the new-comers, and the Teutonic invasion completed their submergence. Dr. Ripley, however, is scarcely correct in stating that the Alpine immigrant type never reached Ireland, as traces of them have been recorded (*cf. Proc. Roy. Irish Acad.* (3), iv. 1898, p. 570). The distribution of stature bears out a distinction between the Goidels and the Brythons; but the high stature found in South-west Scotland is anomalous, and requires further study.

It is impossible to deal with all the controversial problems in the book, but an author can generally be gauged by his treatment of critical cases, and of these it is no exaggeration to say that Dr. Ripley always takes a sane position. The origin of the Etruscans is a case in point. The different views of various authors are briefly stated, but the author inclines to Sergi's theory that the Etruscans were really compounded of two ethnic elements, one from the north bringing the Hallstatt civilisation of the Danube Valley; the other Mediterranean, both by race and culture. The sudden outburst of a notable civilisation being the result of the meeting of these two streams of human life, the author appears to have overlooked the probability of a similar history for early Greece.

A whole chapter is given to a discussion of the Basques, and Collignon's deductions are adopted. The French

Basques of to-day are more pure than the Spanish; but they originally came from Spain. Although the Basque face is extraordinarily narrow, the head is broad; but this is not due to a mixture with the Alpine race, as the Basque head is essentially dolichocephalic, the breadth occurring pretty far forwards near the temples. We have here, in fact, an example of a local modification (a sub-species of the Mediterranean stock) evolved by long-continued and complete isolation, in-and-in breeding primarily engendered by peculiarity of language, and perhaps intensified by artificial selection.

After having analysed the various European groups, Dr. Ripley devotes a couple of chapters to European origins and others to social problems, such as environment *versus* race, acclimatisation, and urban selection; in the latter he discusses the tendency to long-headedness, shortness of stature and brunetness that characterises most large towns.

Dr. Ripley has presented us with a very valuable and most interesting study of the origins and physical characteristics of various European peoples, which is as indispensable to students of history and sociology as it is to anthropologists. The clearness with which he states and illustrates his facts leaves nothing to be desired, and we offer him our congratulations on having coped so successfully with an intricate problem, and on having brought his laborious researches to such a satisfactory conclusion.

The book is handsomely "got up," and is sumptuously illustrated. There are 222 carefully-selected portrait types, and 86 maps and diagrams. The selection of the portraits could have been no easy task, and the construction of the distributional maps must have entailed an infinitude of labour. The volume concludes with a bibliography on the anthropology and ethnology of Europe, which is as appalling as it is invaluable.

A. C. HADDON.

A REVISION OF CERTAIN CELL PROBLEMS.

Histologische Beiträge, Heft VI.: Ueber Reaktions-theilung, Spindelbildung, Centrosomen und Cilienbildner im Pflanzenreich. Von E. Strasburger, o.ö.

Professor an der Universität Bonn. Pp. xx + 224. Mit vier litho. Tafeln. (Jena: Gustav Fischer, 1900.)

IT is with no small degree of pleasure that we have perused this, the latest, addition to the five series of "Histologische Beiträge," by Prof. Strasburger. The new volume, like some of its predecessors, deals almost exclusively with cell problems, and anything which its author may have to say on such matters must always command special respect. Breadth of treatment and open-mindedness, no less than thoroughness, have always characterised the work of this great investigator, and perhaps few who are not familiarly acquainted with the cell literature up to the early seventies can realise the extent to which our modern knowledge of cytological phenomena is indebted to the pioneer researches of the author of "Zellbildung und Zelltheilung."

In the volume before us, amongst other topics, the whole subject of what are now familiarly known as "Reduction-divisions" is treated afresh, and emphasis is

laid on the need for a wider basis of comparison before we can return a satisfactory answer to the question as to whether the reduction is only *quantitative*, or whether as Weismann and his followers have supposed, it is *qualitative* also.

The majority of English and German botanical cytologists have decided in favour of the former view, and the researches of Flemming, Brauer, Meves and others on the animal side have shown that the opposite view is, at least, not always tenable. The case of the Salamander especially appears to be impossible of interpretation from the standpoint of the "Qualitative" hypothesis, and now Strasburger shows that the vitally important feature in the Salamander mitosis, *viz.* the *longitudinal* fission of the retreating chromosomes during the diaster stage of the first reduction division, is closely paralleled by the behaviour of the nucleus in the pollen mother cells of *Tradescantia*. Such a discovery is of the highest value as supporting the evidence already accumulated in favour of the merely quantitative character of these mitoses. The explanation which Strasburger gives of the structure of the ordinary V-shaped chromosome in the first reduction diaster will not, perhaps, gain general acceptance till it has been tested afresh. He believes that the original rod-shaped chromosome, divided longitudinally in two planes cutting each other at right angles, first splits completely into two daughter-chromosomes upon the spindle, and then that each of them opens out along the second plane of cleavage, only cohering at one end thus giving rise to the V-shaped chromosomes of the diaster. During the second division, the latter finish their longitudinal fission by complete separation of the limbs at the apex of the V, and thus what would appear to be a transverse fission proves to be merely the finish of a longitudinal splitting incepted at a much earlier period.

The author also discusses the nature of the causes which have brought about the difference of sex, and dismisses the "hunger" and autophagy hypothesis of Dangeard, which is, perhaps, a rather crude form of the less tangible but familiar theories of rejuvenescence. The view is supported that one important factor lies in the comparative absence of kinoplasm from the female, and of trophoplasm from the male, gamete. But it may, perhaps, be questioned whether the study of the evolution of sex in such forms as the green algæ does not favour the conclusion that such a difference is a result rather than a cause of sex-difference.

Incidentally, the view recently advocated by Němec, that the reproductive mitoses, in their early multipolar character, contrast with the universally bipolar vegetative divisions, is shown to be without foundation. Multipolar spindles occur both in pollen mother cells and in those of the root apex in *Vicia*, and the present writer has also observed them in the apical meristem of *Equisetum*.

The frequent connection of spindle fibres with extra-nuclear nucleoli is admitted, and is utilised to support the contention that these enigmatical bodies stand in a close relation to the kinoplasm which they are regarded as "activating." Many of the bodies which have, by different writers, been described as centrosomes are certainly nothing else than these escaped nucleoli, and in